

Cumulative Patching / Patch Catalog



A new, optimized update tool for Sage X3

From Sage X3 / Sage X3 HR & Payroll / Sage X3 Warehousing 2019 R5 (12.0.20)

NOTE: The term **Sage X3** in this document refers to all Sage X3 suite products: Sage X3, Sage X3 HR & Payroll, and Sage X3 Warehousing.

Patch Catalog and Cumulative Update: Update your Sage X3 instance to the target Release level, in a single patch.

The Sage X3 2019 R5 update introduces a major change to the way Sage X3 is updated (patched).

Sage will now deliver a single complete patch for each release. The patch will update Sage X3 to that release level, from any base level starting 2019 R4.

You can apply the 2019 R5 (12.0.20) patch to your 2019 R4 (12.0.19) instance to update it to 2019 R5:



But you will also be able to apply the 2020 R1 patch to your 2019 R4 instance to update it to 2020 R1:



In short, you will be able to update from any Release “R” to any Release “R+n” simply by applying the single R+n patch, **as long as “R” is at least 2019 R4 (12.0.19).**

IN OTHER WORDS:

TO UPDATE YOUR SAGE X3 INSTANCE FROM 2019 R4 OR MORE TO YOUR TARGET RELEASE, JUST APPLY THAT RELEASE’S PATCH.

This is called **Cumulative Patching**. It relies on the Patch Catalog, a new feature in Sage X3, and *can be run only from the **Easy Update** function in Sage X3 (Administration > Updates).*

As a result, starting with the update to 2019 R5 (12.0.20), **the Easy Update mechanism (Administration > Update > Updates) is the only update method** usable for standard patches.

Prerequisites and important warnings

- Starting from 2019 R4, the only way to update your Sage X3 instance or to apply Sage official hot fixes is now **Easy Update** (Administration > Update > Updates). **You can no longer use the classic Patch function (Development > Utilities > Patches > Patch Integration) for standard patches.** You still need to use the classic Patch function to install or update add-ons and custom (specific) developments.
- In order to use the new **Easy Update** feature, you need to **be in 2019 R4 (minimum)**, including the corresponding Syracuse and Runtime components.
- **TEST Folders** and the **Patch Test** function (Development > Utilities > Patches > Test Patch) do not apply anymore and **will not work**. You need to create a **Test Solution** rather than a test folder to test a release upgrade.
Please make sure you **remove test folders from your solution or return them to normal state**.

Updating Sage X3 to R5+ if your Release is older than 2019 R4

Please do the following if your Release is older than 2019 R4:

- Update to 2019 R4 sequentially. For example, if your release is 2019 R2, you will need to install 2019 R3 and 2019 R4 sequentially, as has always been the case. **Make sure you install 2019 R4 using Easy Patching (Administration > Update > Updates) or that you install all patches delivered with 2019 R4 including DIVPATCH, INDPATCH etc.**
- Once you are in 2019 R4, you can update to the release of your choice by installing only that release's patch using Easy Update.

1 Principles

An Easy Update cumulative patch now contains all elements needed to upgrade from 2019 R4 (base Release) to any of the subsequent Releases: Scripts, screens, windows, tables, local menus etc.

However, each item is only contained **once at its final state for that Release** which optimizes patch contents, removes duplication and streamlines patch integration. Each of the elements will be installed only once when installing the patch. Also, only elements that pertain to existing languages and legislations are installed.

When a patch is installed, elements that have been updated are logged in the **Patch Catalog** which stores the detailed update status of the folder. See below for more details on the Patch Catalog.

2 Patch archive structure

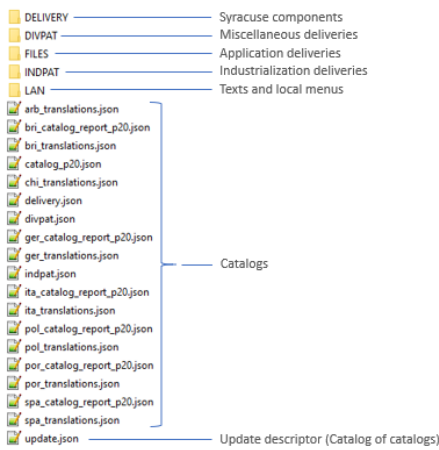
The structure of Sage X3 standard patch archives has changed considerably from 2019 R5 (12.0.20).

A patch is still delivered in two archives containing on one hand **the patch itself** and on the other hand **the documentation**, as was the case in previous releases.

However, each patched element (Table, screen, report...) is now contained *only once* and *in an individual patch file*.

2.1 Catalogs

Individual patch files are contained in a set of directories with the different deliveries. A set of **catalogs** that in the root folder describe those deliveries:



2.2 Update.json: The catalog of catalogs

The catalogs available in the patch are referenced in this configuration file, a catalog of catalogs:

```
{
  "name": "x3-patch-12.0.20",
  "version": "R090.020.000",
  "description": "x3-patch-12.0.20",
  "factoryOwner": "SAGE",
  "schema": "2.0",
  "upgrades": [
    {
      "version": "R090.020.000",
      "dependency": "R090.019",
      "patches": [
        {
          "name": "DELIVERY catalog",
          "component": "SYRACUSE",
          "catalog": "delivery.json",
          "description": "Directory resources (standard)"
        },
        {
          "name": "catalog_p20 catalog",
          "component": "X3",
          "product": "X3",
          "catalog": "catalog_p20.json",
          "description": "catalog_p20 Catalog"
        },
        {
          "name": "DIVPAT catalog",
          "component": "X3",
          "product": "X3",
          "catalog": "divpat.json",
          "description": "DIVPAT Catalog"
        }
      ]
    }
  ]
}
```

Version and dependency

The **version** and **dependency** properties indicate which version the patch updates to ("**version**"), and *the minimum version the Sage X3 instance must be in before it is updated*, i.e. the minimum "starting" release.

In other words, "**dependency**": "R090.019" means the instance can be updated to the target release only if it is currently 2019 R4 (12.0.19) or more.

Patches

The catalogs that will be installed are listed in the "**patches**" [...] collection.

Individual catalogs listed in "**patches**" (for example `catalog_p20.json`) list all elements in the corresponding patch, including its relative directory path:

```
"date": "2019-12-02T08:50:53.784Z",
"product": "X3",
"patchFiles": [
  {
    "status": "added",
    "objectType": "TRT",
    "fileName": "FUNGFSFDMAUPD.dat",
    "filePath": "FILES/TRT"
  },
  {
    "status": "added",
    "objectType": "TRT",
    "fileName": "FUNGFSMOPT.dat",
    "filePath": "FILES/TRT"
  },
  {
    "status": "added",
    "objectType": "TRT",
    "fileName": "FUNGFSSCH.dat",
    "filePath": "FILES/TRT"
  }
],
```

3 How to update

This section shows you how to update, step by step.

3.1 Back up your folders!

It is very important you back up your folders (**SVG**) prior to upgrading.

You should create a **snapshot** or a **clone** of your instance if it is hosted on a virtual platform.

3.2 Perform the upgrade on a test instance

We strongly recommend you perform the update on a Test instance prior to rolling it out on a production system.

WARNING: Patch Test function and the TEST Folder

PLEASE NOTE THE **PATCH TEST** FUNCTION DOES NOT WORK ANYMORE WITH A STANDARD PATCH (FROM 2019 R5).

PLEASE NOTE THAT THE **TEST FOLDER** CAPABILITY IS NOW OBSOLETE WHEN UPGRADING TO SAGE X3 2019 R5 (12.0.20) OR HIGHER. A **TEST FOLDER** WILL NOT WORK ANYMORE. YOU NEED TO USE A TEST SOLUTION TO TEST STANDARD UPGRADES.

PLEASE SEE **INSTRUCTIONS** ON HOW TO CLEAN UP A **TEST FOLDER**.

3.3 Execute the update

Please follow the instructions below to execute the update:

- Go to **Administration > Update > Updates**
- Check the status of previous updates in the list. Make sure all updates have been completed successfully *until at least release 2019 R4*.
- Select **Actions > Add an update** to create a new update.
- Upload the patch zip file into the update using the “drag into” box or using the **Select file** link.
- Once the update is loaded, select the Endpoint to update. You must select **only the X3 Endpoint of the solution you need to update**:

<input type="checkbox"/>	Description
<input checked="" type="checkbox"/>	EMV12 / X3
<input type="checkbox"/>	My Dev Endpoint
<input type="checkbox"/>	My Endpoint 1
<input type="checkbox"/>	Syracuse administration

The X3 Endpoint represents the “parent endpoint” of the solution you are updating.

- Once the X3 Endpoint is selected, all folders in your solution will be listed in the section below it:

Apply to
Apply to endpoints

Endpoint

EMV12 / X3

Folders to update

Name	Parent	Legislations	Version	Updated
X3		FRA,BRI,CHI,GER,ITA,POR,SPA,USA,POL,SWI,ZAF,AUT,ANG,AUS,BEL,BRA	90.19.0	10/2/2019
X3CRMNGDEV	X3	FRA	90.19.0	10/9/2019
X3CRMNG	X3	FRA	90.19.0	10/2/2019

AGAIN: Select only the X3 Endpoint in “Apply to”

SELECTING THE X3 “PARENT” ENDPOINT OF YOUR SOLUTION WILL ALSO AUTOMATICALLY SELECT ALL FOLDERS IN THE SOLUTION.

PLEASE SELECT ONLY THE X3 PARENT ENDPOINT.

DO NOT SELECT INDIVIDUAL FOLDERS IN THE SOLUTION.

- You can now test the update using the **Test Update** action, or execute it using **Apply Update**.

4 Update operation

When you execute the update, the catalogs listed in **update.json** are browsed sequentially and imported into Sage X3. Application catalogs are compared against existing elements in the different folders of your solution.

Application update

Application elements (Windows, screens, tables, reports...) are installed into Sage X3 in the following order:

- The **X3** reference folder is updated first.
- If that parent level is successful, all **child folders** are updated in parallel. If the previous step was not successful, child folder updates are not launched and the update stops.
- If that level is successful, all 3rd level folders are updated in parallel if they exist.

During application update, **log files (.log)** are created in the Folders/X3/TRA directory. The log files are split by type of operation, but they can be viewed in a consolidated manner in the **Updates** function once the update is completed.

Folder update actions

The following sequence of events are executed by the system for each folder in the solution:

```
START_UPDATE
  For each Folder:
    START_UPGRADE_FOLDER
      For each patch:
        CONTROL_PATCH
        APPLY_PATCH
      END_UPGRADE_FOLDER
    END_UPDATE
```

START_UPDATE

This action is called once at the beginning of an update operation for a Sage X3 solution. It checks global information regarding each folder upgrade and specifies which upgrade can be installed on each folder. It returns a global result and an array of folder v/s upgrades.

START_UPGRADE_FOLDER

This action is called once at the beginning of each Sage X3 folder upgrade. It writes the first record in the **AUPDATE** table for that folder. A global status is returned in the response.

CONTROL_PATCH

This action is called for each patch on each folder. It checks information concerning a specific patch in the update.

APPLY_PATCH

Called for each patch on each folder. This action applies the content of a patch.

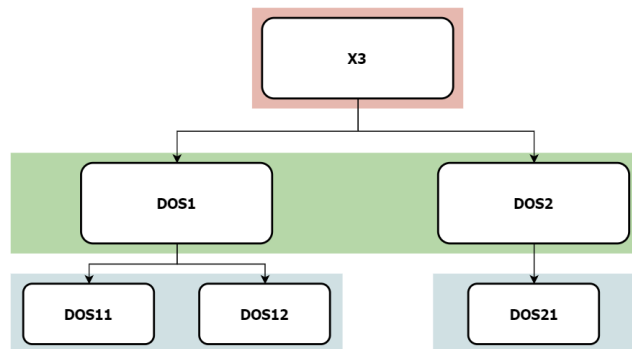
END_UPGRADE_FOLDER

Called once at the end of an upgrade for each folder. This action runs scripts needed at the end of a folder upgrade.

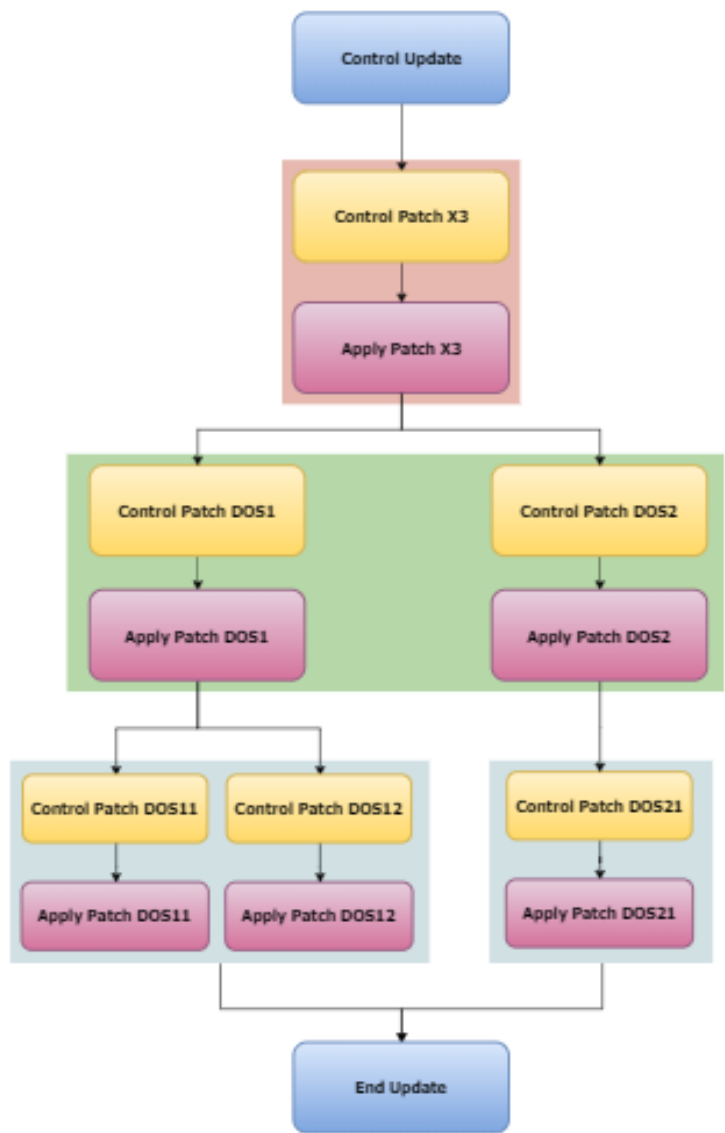
END_UPDATE

Called once after all other actions have been run and only if START_UPDATE has returned "success". This action runs scripts when the update has completed on all folders.

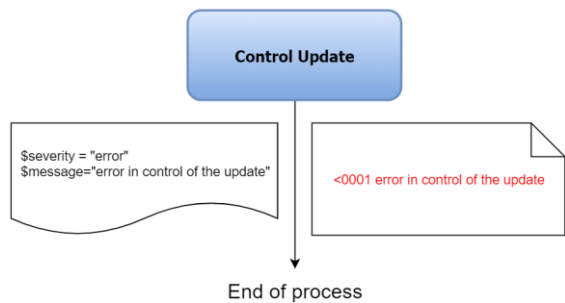
Here are some examples using the following 3-level folder architecture:



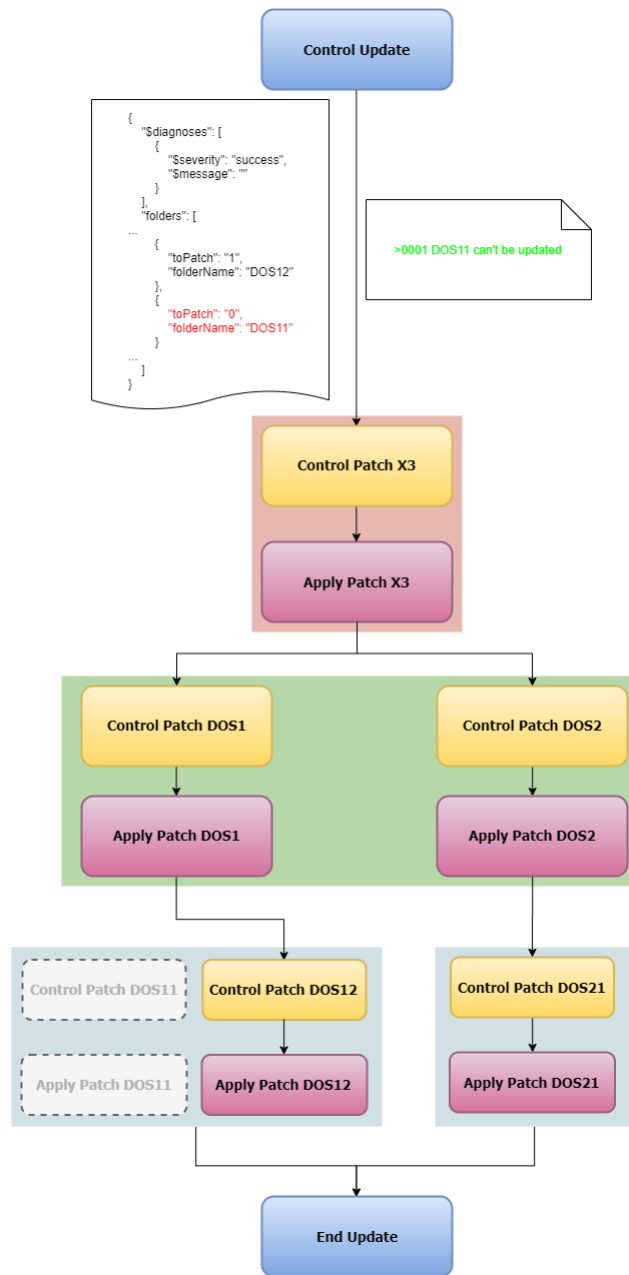
Here is the sequence of events that is executed if there is no error:



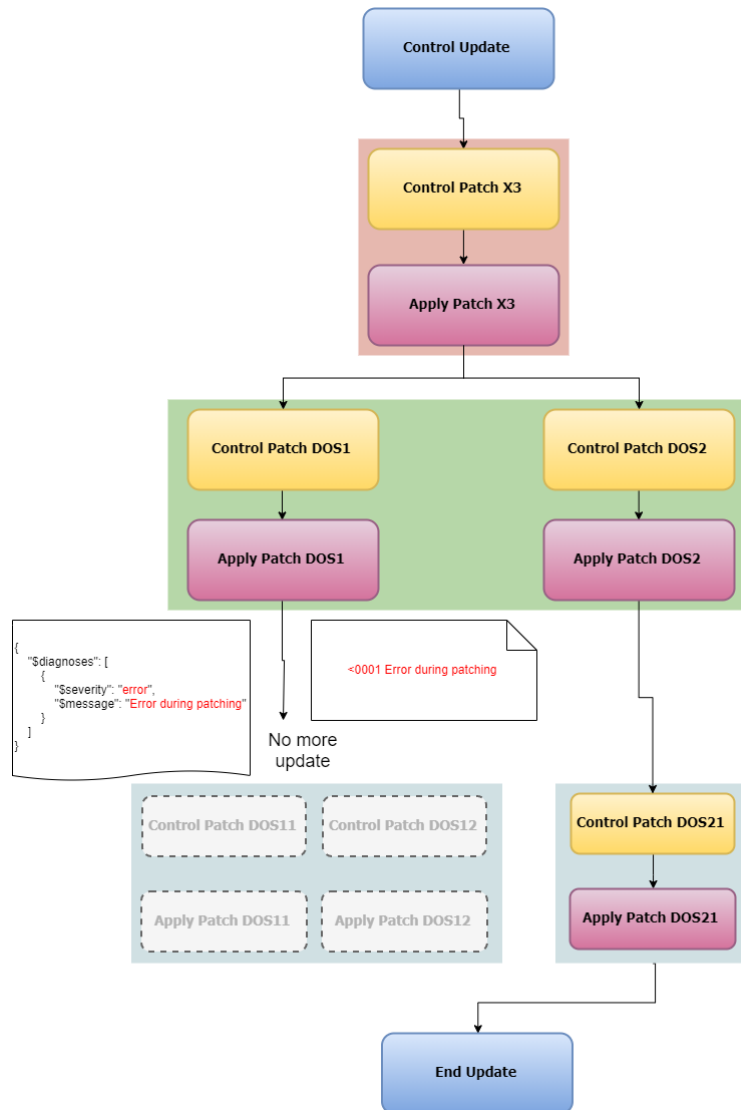
The sequence is immediately stopped if there is an error when performing the global check:



This happens when a folder (in this example **DOS11**) is detected as “non-updatable”:



... and when there's an error during patch application, the *child level is not updated*:



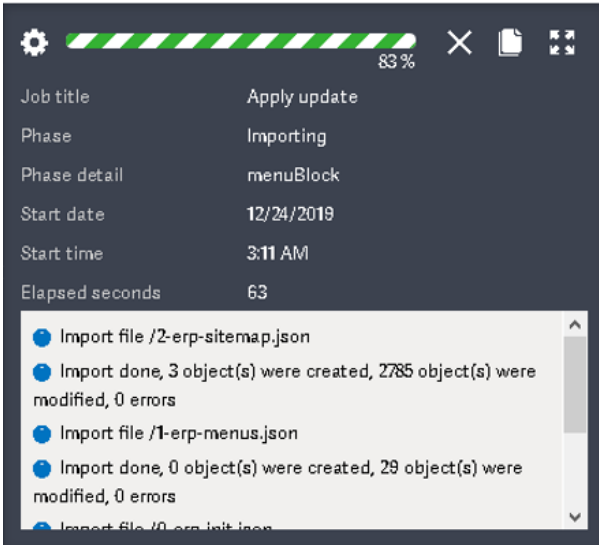
The Catalog

When application elements are installed into Sage X3, they are recorded in the **Update Catalog**, stored in tables **AUPDATE**, **AUPDATELINE** and **AUPDATEPATH**. Those tables are updated for each element during patch installation, or when you validate a Folder.

Catalog details can be seen in the **GESAUPD** function (**Development > Utilities > Patches > Update**). Please see section **5.2 (GESAUPD: Update Status / Patch Catalog)** for more details on this function.

5 Checking the results

Update progress is shown in the progress window:



Final result details can be viewed in both the **Updates** function (**Administration > Update > Updates**) or, when connected to an endpoint, through **GESAUPD: Development > Utilities > Patches > Update**.

5.1 Updates (Administration > Update > Updates)

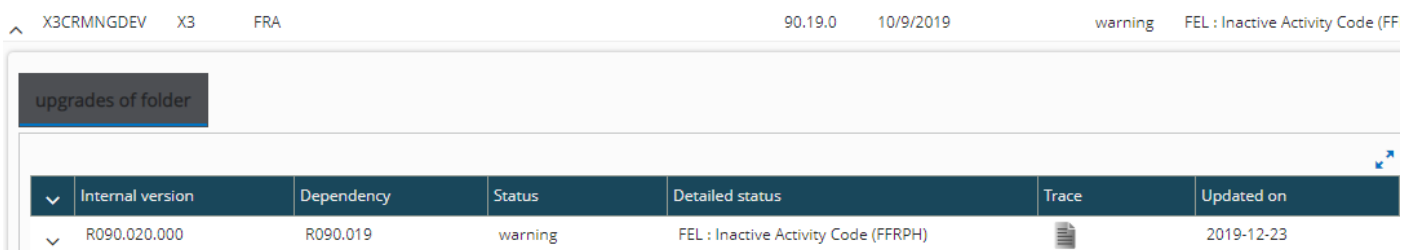
This shows all updates performed on solutions linked to this web server.

Each reference endpoint (e.g. [Solution] / X3) is shown with all child folder levels. The final status will show **Success**, **Warning**, **Error** or **In Progress**.

✓	Name	Parent	Legislations	Version	Updated	Maintenance	Status	Detailed status	Log
✓	X3		FRA,BRI,CHI,GER,ITA,POR,SPA,USA,POL,SWI,ZAF,AUT,ANG,AUS,BEL,BRA	90.19.0	10/2/2019		warning	FEL : Inactive Activity Code (FFRPH)	📄
✓	X3CRMNGDEV	X3	FRA	90.19.0	10/9/2019		warning	FEL : Inactive Activity Code (FFRPH)	📄
✓	X3CRMNG	X3	FRA	90.19.0	10/2/2019		warning	FEL : Inactive Activity Code (FFRPH)	📄

The **Version** and **Updated** columns show the *last* release number and *last* update date *prior to the current update*. In this example, those are 2019 R4 (12.0.19) folders that were last updated in October 2019.

The details of the current update will be shown when expanding each folder line:



In this example, the X3CRMNGDEV folder was upgraded to 2019 R5 (12.0.20) on December 23, 2019. The update was completed with warnings hence the **warning** status.

5.2 GESAUPD: Update Status / Patch Catalog (Development > Utilities > Patches > Update)

This function shows the details of the solution's folder updates, in other words the Patch Catalog. It focuses on application (classic) patch updates.

The left list shows each folder update sequentially, in the order it was performed. In the following example, a standard X3 + SEED instance was updated to R5:

Sequence	Folder	Update
1	X3	Standard
2	SEED	Standard
3	X3	Standard
4	SEED	Standard

The screenshot shows the 'Detail' view of a patch update. The 'General' section contains the following information:

- Sequence:** 4
- Folder:** SEED
- Update type:** Standard
- Internal version:** R090.020.000
- Upgrade status:** Complete
- Process type:** Integration
- Application end date + UTC time:** 12/24/2019 03:49

General

This section contains general information about the update such as the update type, Internal version (Release number) of the update, status and end date and time.

Update type can be:

- **Standard:** A normal, full update from the current release to a target release
- **Hotfix:** A special fix released by Sage in between full updates, that does not update the release number

The **Status** will indicate whether the update was successful for that folder:

- **Control OK:** Initial checks have been done
- **In progress:** Integration is in progress, or the server has stopped during the update. In that case, the status will show **In Progress** indefinitely. You can use the **Status update** button to reset the status to **Error** and then relaunch the update.
- **Completed:** Integration is complete
- **Error:** Integration is halted because of an error. You need to review the log files before launching the update again. See section 6 (**Errors and Interruptions**) for more details on error processing.

The **Process type** indicates whether the update was done through:

- **Integration** (An update through patching)
- **Validation** (An update through folder validation)

The **General** section also displays the two global log files for this folder, the one resulting from initial controls, and the one resulting from processes run after patch integration (for example Window validation). The log files can be accessed from the action link on each field:

Log in global check phase

X3/[TRA]/F30	⋮
Integration end log file	Global Check : Log Reading
X3/[TRA]/F52	⋮

Split

The **Split** section shows the results of catalog comparison and integration along with related log files.

The system will compare, for each folder, the folder’s catalog with the patch catalog to be implemented, depending on the elements in the folder’s catalog, on the legislation implemented and on the languages activated in the folder.

The result is a list of elements to be installed on the folder.

Special elements that need to be installed first, and then used for the rest of the patching process, are **split** and listed separately. Those are system elements (for example PATCH* scripts used for the patching process) that are needed for the rest of the patching process. In this example, PATCH elements are listed on the first line, and then the rest of the catalog:

Split

	Catalog	Status	Language	Legislation
1	SEED_resultPATCHScriptsvcatalog	Complete		
2	SEED_resultvcatalog	Complete		
3				

The line action link shows the link to the two log files produced by each of the catalogs: The one for the control phase and the one for the “apply” phase:

Split

	Catalog	Status
1	SEED_resultPATCHScriptsvcatalog	Complete
2	SEED_resultvcatalog	Complete

- Popup view
- Check : Log Reading
- Apply : Log Reading**

Details

The details section lists all elements that have been installed on this folder by that update.

Detail

3231 Results Display: 25 1 2 3 4 5 6 ... 130

	Catalog	Object type	Identifier 1	Ide...	File name	Action on	Access path	Line
1	SEED_resultPATCHScriptsvcatalog	ADC	PATCH_LAN		_PATCH_LAN	Creation	C:\Sage\X3ERP\12\Folders\X3\PATCH\FILES	
2	SEED_resultPATCHScriptsvcatalog	ADX	PATCH		PATCH	Modification	C:\Sage\X3ERP\12\Folders\X3\PATCH\FILES	
3	SEED_resultPATCHScriptsvcatalog	ADX	PATCHADI		PATCHADI	Modification	C:\Sage\X3ERP\12\Folders\X3\PATCH\FILES	
4	SEED_resultPATCHScriptsvcatalog	ADX	PATCHADP		PATCHADP	Modification	C:\Sage\X3ERP\12\Folders\X3\PATCH\FILES	
5	SEED_resultPATCHScriptsvcatalog	ADX	PATCHAMK		PATCHAMK	Modification	C:\Sage\X3ERP\12\Folders\X3\PATCH\FILES	
6	SEED_resultPATCHScriptsvcatalog	ADX	PATCHDIV		PATCHDIV	Modification	C:\Sage\X3ERP\12\Folders\X3\PATCH\FILES	
7	SEED_resultPATCHScriptsvcatalog	ADX	PATCH_LAN		PATCH_LAN	Creation	C:\Sage\X3ERP\12\Folders\X3\PATCH\FILES	
8	SEED_resultPATCHScriptsvcatalog	ADX	PATCH_UPDATE		PATCH_UPDATE	Modification	C:\Sage\X3ERP\12\Folders\X3\PATCH\FILES	
9	SEED_resultPATCHScriptsvcatalog	ETA	PATCH		PATCH	Modification	C:\Sage\X3ERP\12\Folders\X3\PATCH\FILES	

That is, in essence, the Patch Catalog that is used as a basis for comparison in subsequent updates.

6 Errors and interruptions

If the update is interrupted for any reason, after processing the root cause, **you can restart the update on all folders as described in section 3 (How to Update)**. The update logic will **skip any element that has already been installed** in the solution's folders and recorded in the catalog tables.

This allows you to complete interrupted or partial updates as many times as necessary.

If the update is "stuck" in an **In Progress** status, which might be caused by a server issue, please use the **Status update** button to refresh the status and take the necessary steps. This will refresh the status to **Error** if that is the case, and you will then be able to restart the integration from the **Updates** function (Administration > Update > Updates).

Status update

The **Status** in **GESAUPD** will indicate whether the update was successful for that folder:

- **Completed:** Integration is complete
- **Error:** Integration is halted because of an error. You need to review the log files before launching the update again. See section 6 (**Errors and Interruptions**) for more details on error processing.
- **In progress:** Integration is in progress, or the server has stopped during the update. In that case, the status will show **In Progress** indefinitely. You can use the **Status update** button to reset the status to **Error** and then relaunch the update.

7 FAQ

7.1 Can I upgrade from 2019 R2 to 2020 R1 using this method?

No. You need to upgrade to 2019 R4 first using the “old” method, by installing 2019 R3 and then 2019 R4. Only then can you upgrade from R4 straight to 2020 R1 by installing 2020 R1.

7.2 I need to upgrade from 2019 R4 to 2020 R3. Do I need to install 2019 R5, 2020 R1 and 2020 R2?

No. You just need to install the 2020 R3 patch.

7.3 What happens if there is an error and the update stops?

Check the log files available in the relevant folder update details in GESAUPD (Administration > Update > Updates) to review the details. Once the error is remedied, you can **simply reapply the Update** using the **Apply Update** action. Easy Update will skip all items that have already been installed on any of the folders and will install the rest of the items using incremental logic based on the existing patch catalog data.

Never forget to back up your system before updating, and always perform a test upgrade on a test instance before upgrading a live environment if you are running your own on-premise instance of Sage X3.

7.4 Can I generate a Cumulative Patch for my custom (specific) developments?

No. Cumulative Patches are built only for standard updates and for official hotfixes for the time being. You can continue using the classic Patch features for add-ons and custom (specific) developments.

7.5 Can I install standard patches using Cumulative Patching if my folder contains custom (specific) developments?

Yes of course. You can patch as usual including on folders containing custom developments. **Make sure you test your updates on a test instance prior to updating a production environment.** Also make sure you back up your production environment before installing the update.

Patching logic has not changed: You need to install standard patches using Easy Update and then update add-ons and customizations as needed using classic patching (if necessary).

7.6 Can I use my TEST folder with Cumulative Patching?

No. TEST folders do not apply anymore and are treated just like any other folder. **Therefore, you need to remove any TEST folders you have in your solution and build a dedicated test solution** instead.

You can also transform a TEST folder into a regular folder by unchecking the **TEST** checkbox, revalidating the folder and removing all standard .src and .adx scripts from its TRT directory.

7.7 Can I use the “Test Patch” function with Cumulative Patching?

No. **Development > Utilities > Patches > Test Patch** only works for classic patches.

7.8 Can I update a single folder in my solution by selecting only that folder in “Apply to” section?

No, you should never do that. **Just select only the X3 reference folder** (or PAIE in a Sage X3 HR and Payroll solution, or GEO in a Sage X3 Warehousing solution).